

U.S. Patent Application No. 09/901,188
Amendment dated November 22, 2005
Reply to Office Action of July 22, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A Programmable Logic Controller ("PLC") system construction support tool for simulating a selection of units and a combination thereof on a screen before a PLC system is actually constructed, said PLC system construction support tool comprising:

a first screen for displaying a list of various units which can be selected for constructing a PLC system, wherein the list of various units comprises units making up a PLC system; and

a second screen for displaying the units selected from the first screen in the same configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen, wherein the second screen displays the information in numerical form in an area adjacent to a row of the units on the second screen, the information comprising total values of at least one of current consumption, voltage consumption, width, and weight of each of the units displayed on the second screen; and

a unit type data file storing at least one of the current consumption, the voltage consumption, the width, and the weight of each of the units displayed on the first screen,

wherein whenever a unit is selected from the first screen, at least one of the current consumption, the voltage consumption, the width, and the weight of the selected unit is read from the unit type data file and displayed on the second screen.

2. (original) The PLC system construction support tool as claimed in claim 1, wherein the second screen displays information about the types of the units displayed on the second screen.

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3. (Currently amended) The PLC system construction support tool as claimed in claim 2 20, wherein the second screen displays the information in numerical form in an area adjacent to a row of the units on the second screen, the information comprising total values of at least one of current consumption, voltage consumption, width, and weight of each of the units displayed on the second screen.

4. (Currently amended) The PLC system construction support tool as claimed in claim 3 20, further comprising:

a unit type data file storing at least one of the current consumption, the voltage consumption, the width, and the weight of each of the units displayed on the first screen,

wherein whenever a unit is selected from the first screen, at least one of the current consumption, the voltage consumption, the width, and the weight of the selected unit is read from the unit type data file and displayed on the second screen.

5. (Original) The PLC system construction support tool as claimed in claim 2, wherein the second screen displays the units selected from the first screen on a plurality of rows in the same configuration of rows as the units are actually displayed on said first screen, and displays the information in numerical form in an area adjacent to the corresponding row of the units, the information comprising total values of at least one of current consumption, voltage consumption, width dimension, and weight of each of the units on the corresponding row displayed on the second screen.

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6. (Original) The PLC system construction support tool as claimed in claim 1, further comprising:

a display mode switch unit for switching the second screen between a first display mode for displaying schematic front patterns of the units, and a second display mode for displaying the units as box patterns and for displaying assigned relay numbers of the units in association with the box pattern of the selected unit.

7. (Original) The PLC system construction support tool as claimed in claim 6, further comprising:

a first data file storing information for displaying the units displayed on the first screen on the second screen in the first display mode; and

a second data file storing the assigned relay numbers of the units displayed on the first screen,

wherein in the first display mode, the information concerning the unit selected out of the first screen is read from the first data file and the selected unit is displayed as a schematic front pattern, and wherein in the second display mode, the assigned relay number of the unit selected out of the first screen is read from the second data file and is displayed in a numeric form.

8. (Original) The PLC system construction support tool as claimed in claim 6, further comprising:

a third screen for entering the assigned relay number of each of the units displayed on the second screen.

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9. (Original) The PLC system construction support tool as claimed in claim 8, further comprising:

a screen switch unit for switching the displayed screen between the third screen and the first screen.

10. (Original) The PLC system construction support tool as claimed in claim 6, wherein in at least one of the first display mode and the second display mode, the second screen displays total values of at least one of current consumption, voltage consumption, width, and weight of the units displayed on the second screen in numerical form in an area adjacent to a row of the units on the second screen.

11. (Original) The PLC system construction support tool as claimed in claim 1, further comprising:

a determination unit for determining whether or not a specific unit is selected from among the various units displayed on the first screen; and

a first placement unit for placing the specific unit at a predetermined position on the second screen when the specific unit is selected.

12. (Original) The PLC system construction support tool as claimed in claim 11, wherein the specific unit is a CPU unit.

13. (Original) The PLC system construction support tool as claimed in claim 11, wherein the specific unit is a power supply unit.

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14. (Original) The PLC system construction support tool as claimed in claim 1, further comprising:

a second placement unit for automatically displaying a repeater unit at each of the termination of a first row and the beginning of a second row when the units displayed on the second screen are disposed on the first row and the second row.

15. (Original) The PLC system construction support tool as claimed in claim 1, further comprising:

a third placement unit for automatically displaying an end unit at the termination of a row of the units displayed on the second screen.

16. (Previously presented) A Programmable Logic Controller ("PLC") system program development support tool comprising:

a PLC program creation tool for creating a ladder program and creating a program converted into instruction commands to operate a PLC system in accordance with the created ladder program; and

a PLC system construction support tool built in said PLC program creation tool for simulating a selection of units and a combination thereof on a screen before the PLC system is actually constructed, said PLC system construction support tool comprising:

a first screen for displaying a list of various units that can be selected for constructing a PLC system, wherein the list of various units comprises units making up a PLC system; and

a second screen for displaying the units selected from the first screen in the same

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configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen.

17. (Original) The PLC system program development support tool as claimed in claim 16, wherein the second screen displays information about the types of the units displayed on the second screen.

18. (Original) The PLC system program development support tool as claimed in claim 17, wherein the second screen displays the information in numerical form in an area adjacent to a row of the units on the second screen, the information comprising at least one of current consumption, voltage consumption, width, and weight of each of the units displayed on the second screen.

19. (Original) The PLC system program development support tool as claimed in claim 17, wherein the second screen displays the units selected from the first screen on a plurality of rows in the same configuration of rows as the units are actually displayed on said first screen, and displays the information in numerical form in an area adjacent to the corresponding row of the units, the information comprising total values of at least one of current consumption, voltage consumption, width dimension, and weight of each of the units on the corresponding row displayed on the second screen.

20. (New) A Programmable Logic Controller ("PLC") system construction support tool for simulating a selection of units and a combination thereof on a screen before a PLC system is

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actually constructed, said PLC system construction support tool comprising:

a first screen for displaying a list of various units which can be selected for constructing a PLC system, wherein the list of various units comprises units making up a PLC system;

a second screen for displaying the units selected from the first screen in the same configuration as the units would actually be disposed in the PLC system, said second screen being disposed adjacent to the first screen; and

wherein the list comprises at least one graphical icon that is selectable and adapted to display the second screen.